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| 10/531,787 | 03/15/2006 | Jens Schafer | INA-PT123 (4095-18-US) | 1497 |

3624 7590 11/30/2006

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| EXAMINER |
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CHANG, CHING

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| ART UNIT | PAPER NUMBER |
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3748

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

88

Office Action Summary

Application No.

10/531,787

Applicant(s)

SCHAFER ET AL.

Examiner

Ching Chang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-17, and 19-20 is/are rejected.
- 7) ☒ Claim(s) 14 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☒ Some * c) ☐ None of:
 - 1. ☐ Certified copies of the priority documents have been received.
 - 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 04/18/2005.
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

This Office acknowledges the Preliminary Amendment filed on 04/18/2005. New claims 19-20 are added as requested.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1(a). *Each of the claims 1-2 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over each of the claims 2-3 of copending US Patent Application No. 11/379,401, respectively.*

Although the conflicting claims are not identical, they are not patentably distinct from each other. In addition, the scope of each of the claims 1-2 of the instant application lacks the elements and limitations " the adjusting shaft is arranged in a

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radially floating manner. “, and “ between the adjusting shaft and the adjustment-unit shaft, a coupling is arranged, which allows a slight relative radial displacement between the adjusting shaft and the adjustment-unit shaft. “, thus is broader than that of each of the claims 2-3 of the copending US Patent Application '401, respectively

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

1(b). ***Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US Patent 7,032,552.***

Although the conflicting claims are not identical, they are not patentably distinct from each other, claim 1 of this instant application claims substantially the same invention as claim 1 of the US Patent '552.

Additionally, the scope of claim 1 of this instant application lacks the elements and limitations “ wherein upon a failure of the adjusting motor or a controlling system, the base or emergency running position of camshaft can be reached and maintained by one of braking or setting the adjusting shaft, and rotation of drive shaft, as well as the gear transmission ratio i_o ; wherein for a late adjustment of camshaft a minus gear with $i_o < 0$ or a plus gear with $i_o > 1$ is provided, and for an early adjustment of camshaft a plus gear with $0 < i_o < 1$ is provided; wherein the adjusting motor (2) includes a rotor and a stator fixedly connected to a cylinder head, the rotor includes a permanent magnet, and for a power free setting of the adjusting shaft a holding torque of the adjusting motor is utilized; and at least a provisional functioning of the internal combustion engine is possible by a corresponding setting of the adjusting motor and

through increasing of the holding torque by a changed friction moment of adjusting gear from 60% to 100% of the changed, maximum, dynamic camshaft torque, which reacts upon the adjusting shaft, when starting and with low idle speed. ", accordingly, it is broader than that of claim 1 of the copending US Patent '552.

1(c) Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of US Patent 7,089,897.

Although the conflicting claims are not identical, they are not patentably distinct from each other, claim 1 of this instant application claims substantially the same invention as claim 1 of the US Patent '897.

Additionally, the scope of claim 1 of this instant application lacks the elements and limitations " the adjusting shaft being connected in a torsion-proof manner to the electric adjusting motor; and a stationary gear ratio between the input part and the output part for the adjusting shaft, whose magnitude determines a type of the adjusting gear unit as a positive or negative gear unit as a positive or negative gear unit and determines a direction of adjustment of the camshaft into an advanced position of the camshaft can be reached exclusively through braking of the adjusting shaft when the adjusting gear unit is rotating, and the braking of the adjusting shaft is carried out through short-circuit braking of the adjusting motor. ", accordingly, it is broader than that of claim 1 of the copending US Patent '897.

1(d). Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of US Patent 6,981,478.

Although the conflicting claims are not identical, they are not patentably distinct from each other, claim 1 of this instant application claims substantially the same invention as claim 4 of the US Patent '478.

Additionally, the scope of claim 1 of this instant application lacks the elements and limitations " an adjusting shaft connected in a torsion-proof manner to an adjusting motor shaft of an electric adjusting motor, wherein the adjusting motor is formed as a brushless DC motor with a housing-fixed stator and a permanent magnet rotor, the adjusting gear mechanism includes one of a double eccentric gear mechanism and a double planetary gear mechanism, which exhibit a speed reduction of up to about 1:250 and low friction, and the adjusting motors includes highly inductive permanent magnet rotors. ", and " wherein for a torsion-proof connection of the adjusting gear mechanism to the camshaft, central tension screws and a circular spline connection are provided, which have cylindrical screw heads or a cylindrical circular spline bore hub, which are used as bearing surfaces for the roller bearings. ", accordingly, it is broader than that of claim 4 of the copending US Patent '478.

1(e). Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of US Patent 6,637,389.

Although the conflicting claims are not identical, they are not patentably distinct from each other, claim 1 of this instant application claims substantially the same invention as claim 3 of the US Patent '389.

Additionally, the scope of claim 1 of this instant application lacks the elements and limitations " wherein the separable coupling is configured as a pin coupling

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comprising driving pins that are pressed into axially parallel shaft bores of the driven shaft and engage positively into axially parallel spur gear bores of the spur gears. ", accordingly, it is broader than that of claim 3 of the copending US Patent '389.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 10/17/2002. It is noted, however, that applicant has not filed a certified copy of the Germany 102 48 351.5 10/17/2002 application as required by 35 U.S.C. 119(b).

Claim Objections

3. Claims 1-20 are objected to because of the following informalities:

- " Camshaft " in line 1 of claim 1 should be -- A camshaft --.
- " Camshaft " in line 1 of claims 2-20 should be -- The camshaft --.
- " plastic " in claim 15 should be -- plastics --.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10-13, 16, 19, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

More specifically, " preferably " in claims 10, 16, and 20 renders the claimed subject matter in claims 10-13, 16, and 20 indefinite.

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Furthermore, " the coupling " in claim 19 lacks an antecedent basis, thus renders the claimed matter in claim 19 indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. ***Claims 1-3, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Willmot (US Patent 6,457,446).***

Willmot discloses a camshaft adjuster for adjusting and fixing a position of a angle of rotation of a camshaft (202) relative to a crankshaft (203) of a reciprocating-piston internal-combustion engine, comprising a high transmission and friction-reduced

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adjusting gear mechanism (200) comprising a drive shaft rotationally fixed to the crankshaft, a driven shaft (222) rotationally fixed to the camshaft, and an adjusting shaft (208) connected to an adjusting motor shaft of an adjusting motor (215), the adjusting gear mechanism and the adjusting motor are formed as separate units and are connected to each other by a rotational backlash-free, disengaging coupling; wherein the adjusting motor is an electric adjusting motor; wherein the coupling has two parts, which can be joined together and of which one is rotationally fixed to the adjusting motor shaft and the other is rotationally fixed to the adjusting shaft; wherein the coupling has two parts which can be joined together, one (209) of the parts is formed integrally with the adjusting shaft and the other (a gear) of the parts is formed integrally with the adjusting motor shaft.

9. ***Claims 4-6, 10, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willmot (as applied to claim 3 above) in view of Grashorn (US Patent 3,593,933).***

Willmot discloses the invention, however, fails to disclose the coupling being in two parts and inserted one into the other.

The patent to Grashorn on the other hand, teaches that it is conventional in the shaft coupling art, to utilize a profile shaft coupling (1, 5, 9; 1', 5', 9') between a drive shaft (7) and a sleeve (3)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the profile shaft coupling as taught by Grashorn in

the Willmot device, since the use thereof would provide an easier assembled and maintained camshaft adjuster.

10. *Claims 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willmot (as applied to claim 3 above) in view of Tenfelde (DE '544).*

Willmot discloses the invention, however, fails to disclose the coupling being in two parts and inserted one into the other.

The patent to Tenfelde on the other hand, teaches that it is conventional in the shaft coupling art, to utilize a profile shaft coupling (See Figs. 1-13) with spring (11) between a drive shaft and a driven shaft.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the profile shaft coupling as taught by Tenfelde in the Willmot device, since the use thereof would provide an easier assembled and maintained camshaft adjuster.

11. *Claims 1-3, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Ohlendorf et al. (US Patent 4,986,801).*

Ohlendorf discloses a camshaft adjuster for adjusting and fixing a position of a angle of rotation of a camshaft (11) relative to a crankshaft (203) of a reciprocating-piston internal-combustion engine, comprising a high transmission and friction-reduced adjusting gear mechanism (2, 4, 6, 7) comprising a drive shaft rotationally fixed to the crankshaft, a driven shaft rotationally fixed to the camshaft, and an adjusting shaft (having 18) connected to an adjusting motor shaft of an adjusting motor (24), the

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adjusting gear mechanism and the adjusting motor are formed as separate units and are connected to each other by a rotational backlash-free, disengaging coupling; wherein the adjusting motor is an electric adjusting motor; wherein the coupling has two parts, which can be joined together and of which one (20) is rotationally fixed to the adjusting motor shaft and the other (18) is rotationally fixed to the adjusting shaft; wherein the coupling has two parts which can be joined together, one (18) of the parts is formed integrally with the adjusting shaft and the other (20) of the parts is formed integrally with the adjusting motor shaft.

12. ***Claims 1-3, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Pierik (US Patent 5,680,837).***

Pierik discloses a camshaft adjuster for adjusting and fixing a position of a angle of rotation of a camshaft (16) relative to a crankshaft (14) of a reciprocating-piston internal-combustion engine, comprising a high transmission and friction-reduced adjusting gear mechanism (24) comprising a drive shaft rotationally fixed to the crankshaft, a driven shaft rotationally fixed to the camshaft, and an adjusting shaft (for 40) connected to an adjusting motor shaft (of 68) of an adjusting motor (74), the adjusting gear mechanism and the adjusting motor are formed as separate units and are connected to each other by a rotational backlash-free, disengaging coupling (66, 40); wherein the adjusting motor is an electric adjusting motor; wherein the coupling has two parts, which can be joined together and of which one is rotationally fixed to the adjusting motor shaft and the other is rotationally fixed to the adjusting shaft; wherein

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the coupling has two parts which can be joined together, one (40) of the parts is formed integrally with the adjusting shaft and the other (66) of the parts is formed integrally with the adjusting motor shaft.

13. Claims 4-6, 10, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierik (as applied to claim 3 above) in view of Grashorn (US Patent 3,593,933).

Pierik discloses the invention, however, fails to disclose the coupling being in two parts and inserted one into the other.

The patent to Grashorn on the other hand, teaches that it is conventional in the shaft coupling art, to utilize a profile shaft coupling (1, 5, 9; 1', 5', 9') between a drive shaft (7) and a sleeve (3)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the profile shaft coupling as taught by Grashorn in the Pierik device, since the use thereof would provide an easier assembled and maintained camshaft adjuster.

14. Claims 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierik (as applied to claim 3 above) in view of Tenfelde (DE '544).

Pierik discloses the invention, however, fails to disclose the coupling being in two parts and inserted one into the other.

The patent to Tenfelde on the other hand, teaches that it is conventional in the shaft coupling art, to utilize a profile shaft coupling (See Figs. 1-13) with spring (11) between a drive shaft and a driven shaft.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the profile shaft coupling as taught by Tenfelde in the Pierik device, since the use thereof would provide an easier assembled and maintained camshaft adjuster.

15. ***Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pierik (as applied to claim 3 above) in view of Kamiyama et al. (US 5,687,690).***

Pierik discloses the invention, however, fails to disclose the coupling being a magnetic shaft coupling.

The patent to Kamiyama on the other hand, teaches that it is conventional in the engine art, to utilize a magnetic shaft coupling (56) with a pair of permanent magnets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the magnetic shaft coupling as taught by Kamiyama in the Pierik device, since the use thereof would provide an alternative camshaft adjuster.

16. ***Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Willmot (as applied to claim 3 above) in view of Kamiyama et al. (US 5,687,690).***

Willmot discloses the invention, however, fails to disclose the coupling being a magnetic shaft coupling.

The patent to Kamiyama on the other hand, teaches that it is conventional in the engine art, to utilize a magnetic shaft coupling (56) with a pair of permanent magnets.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the magnetic shaft coupling as taught by Kamiyama

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in the Willmot device, since the use thereof would provide an alternative camshaft adjuster.

Allowable Subject Matter

17. Claims 14, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (571)272-4857. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

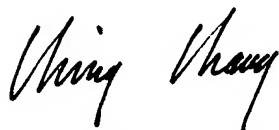
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571)272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner

A handwritten signature in black ink, appearing to read "Ching Chang". The signature is written in a cursive, flowing style with some loops and flourishes.

Ching Chang